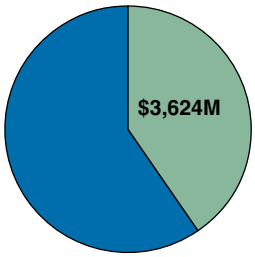
Goal 2 FY 2000 Obligations



Note: EPA FY 2000 Obligations were $8,974 million

GOAL 2: CLEAN AND SAFE WATER

All Americans will have drinking water that is clean and safe to drink. Effective protection of America's rivers, lakes, wetlands, aquifers, and coastal and ocean waters will sustain fish, plants, and wildlife, as well as recreational, subsistence, and economic activities. Watersheds and their aquatic ecosystems will be restored and protected to improve human health, enhance water quality, reduce flooding, and provide habitat for wildlife.

OVERVIEW

Safe drinking water is the first line of defense in protecting human health. The American public enjoys one of the safest drinking water supplies in the world, but illnesses due to contaminants continue to occur. In FY 2000 there were no reported major disease outbreaks caused by microbial or chemical contaminants in drinking water, but during the past decade drinking water contamination caused illness and even death in places such as Milwaukee, Wisconsin; Alpine, Wyoming; and rural upstate New York. As drinking water infrastructure ages and new contaminants are identified, maintaining the nation's safe drinking water supply remains a critical challenge. EPA's human health protection concerns also extend to threats posed by swimming at contaminated beaches or eating contaminated fish.

Clean water and healthy aquatic ecosystems support all life, are vital to many sectors of the U.S. economy, and play an important role in Native American culture. Fish, shellfish, and many bird species depend on healthy aquatic ecosystems for food and shelter. Aquatic plants, which provide food and cover to many aquatic species, need clean water to thrive. U.S. manufacturers and the agricultural industry use vast quantities of clean water every year to produce products, irrigate crops, and raise animals. The nation's waters are the number one vacation choice for Americans. For example, in Long Island Sound, New York, beachgoers contribute more than $800 million annually to the local economy. Many Native American tribes value clean water and some tribes invoke the spirit of water in cultural ceremonies for medicinal and purification purposes.

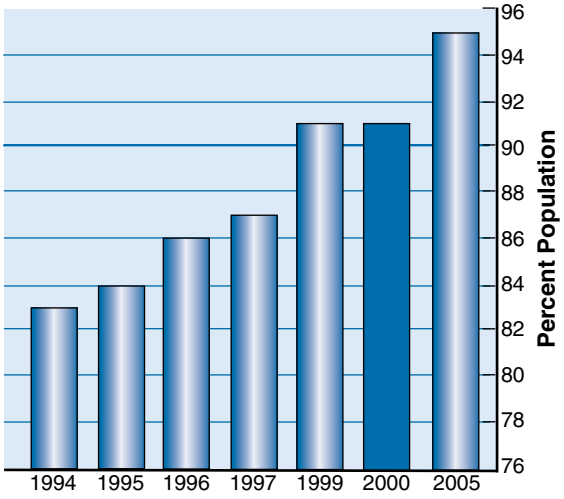
FY 2000 PERFORMANCE

Protecting People From Contamination in Drinking Water, Fish, and Recreational Waters

Improving Drinking Water Quality

For the second consecutive year at least 91 percent of the American public served by community water systems received water meeting all health-based drinking water standards in effect since 1994, even as EPA, states and tribes worked collaboratively to develop new national standards and regulations. In addition the population served by non-transient, non-community (NTNC) drinking water systems with no violations in FY 2000 was 93 percent, just below the target of 96 percent. EPA missed the target because the Agency estimated FY 2000 performance based on the data reported by non-transient water systems several years

Population Served by Community Water Systems Meeting Drinking Water Standards



ago. The actual information reported for FY 2000 includes data from many more of these systems, which are now subject to more rigorous reporting requirements. The FY 2000 data reflects a more complete and accurate picture of human health protection for persons who drink water supplied by these NTNC drinking water systems. The Agency has worked diligently with states and water systems over the past few years to implement its drinking water data reliability plan.

In FY 2000 EPA headquarters and regions, tribes and states took significant actions in four key areas: focusing regulations on high-risk contaminants, improving consumer right-to-know about drinking water quality, protecting source waters, and financing improvements to drinking water systems. To address microbial contaminants such as *Cryptosporidium, E. coli,* and *Giardia*, which are the most widespread threat to drinking water, in the spring of 2000 EPA proposed the Ground Water Rule and the Long-Term Enhanced Surface Water Treatment Rule. These two rules will protect consumers served by groundwater and small surface water systems by preventing up to 198,000 cases of waterborne disease per year. They build on the Interim Enhanced Surface Water Treatment Rule, promulgated in 1998, which required surface water systems serving over 10,000 persons to protect against microbial contamination. Together these rules will complete the first series of measures for microbial protection, and cover all consumers of water provided by public water systems, whether from surface water or groundwater, in small towns and large cities.

In addition EPA and a Federal Advisory Committee composed of states, water systems, medical professionals, and other public officials, reached agreement on the second phase of standards mandated by the 1996 Safe Drinking Water Act (SDWA) Amendments involving microbial contaminants, disinfectants used to treat such contaminants, and disinfection byproducts resulting from treatment. These standards will increase controls for source waters at high risk of contamination by *Cryptosporidium, et.al.* Also they are examples of the Agency's first endeavor to address acute health effects that may be caused by disinfection byproducts and thereby will assure equal protection from exposure to these byproducts throughout the drinking water distribution system.

Radon and arsenic were the high-risk chemical contaminants addressed by the drinking water program in FY 2000. In November 1999 the Agency proposed a multimedia mitigation approach for radon that will have a significant effect on reducing the human health risk from radon in drinking water as well as in indoor air. EPA also proposed new protective standards to address arsenic in drinking water in June 2000. Arsenic is a known carcinogen and is also linked to many noncancer health effects. EPA, states, tribes, and water systems agree that the current, 50-year old arsenic standard of 50 parts per billion (ppb) does not provide adequate human health protection. In March 1999 the National Academy of Sciences concluded that the current 50 ppb standard does not protect human health and recommended that it be revised downward as quickly as possible. Consequently the revised rule not only proposed a lower level but also requested comment from both the drinking water community and the general public on alternative regulatory levels that would be reviewed thoroughly and carefully during the final rulemaking process.

The human health protection afforded by these new standards can be realized only if there is effective implementation at the state, tribal and local levels. In this regard EPA conducted more than 20 training and technical assistance sessions with regional, state, and drinking water utility staff during FY 2000 on rules addressing microbial contaminants and disinfectants/ disinfection byproducts, lead and copper, consumer confidence, and unregulated contaminant monitoring, as well as on guidelines for operator certification. Ten workshops on small systems' concerns were also held nationwide. States, associations, and environmental groups have undertaken an unprecedented effort at training and technical assistance for water systems, particularly small systems, local governments, and the general public. In addition EPA has worked with partners to lead many nationwide endeavors to increase public drinking water protection and awareness. All states are overseeing capacity development and operator certification programs to ensure that owners and operators of public water systems are fully implementing existing and new SDWA requirements.

The Agency is approaching and promoting prevention of drinking water contamination through both voluntary and mandatory activities. Fifty states and territories have an EPA-approved Source Water Assessment and Prevention Program and conduct

CONSUMERS GET BETTER AND FASTER INFORMATION ABOUT THEIR DRINKING WATER

As a result of the new Consumer Confidence Report Rule, for the first time ever approximately 253 million Americans have access to annual consumer confidence reports on the quality and safety of their drinking water. These reports give customers of drinking water systems the information they need to make their own health decisions. More than 100 million Americans are able to read their water quality reports on-line. Water systems, states, and EPA worked hard to assure compliance with this rule in its first year, providing reports for 99 percent of the population covered by the rule. In May 2000 the Agency also revised the Public Notification Rule to require public water systems to alert consumers within 24 hours if there is a serious problem with their drinking water that might pose a health risk.

assessments of their public water supplies. Data from these assessments will help determine the susceptibility to contamination of each state's sources of public drinking water and set the stage for community water systems to target their efforts to actual or potential high-risk contaminants. Forty-nine states are voluntarily going beyond the requirement of the SDWA, which is only to complete the assessments, by beginning to act to prevent source water contamination, based on information gathered during the assessments. These next steps are critical to the future of the drinking water program, and are the primary responsibilities of states, tribes, and water systems to implement. In December 1999 EPA issued new final regulations on two types of shallow disposal wells into which a variety of hazardous and nonhazardous fluids (e.g., chemicals, mining, oil, and gas) is injected below the land's surface. There are an estimated one million underground injection wells nationwide, of which about 700,000 are shallow disposal wells. The new regulations, targeted to motor vehicle disposal and cesspools, are a vital tool in ensuring that fluid wastes are contained in these disposal wells safely, and do not pose a health risk to the majority of U.S. public water systems that get their drinking water from groundwater.

Over the past four years of the Drinking Water State Revolving Fund (DWSRF), EPA has made available approximately $3.6 billion in assistance to all 50 states, Puerto Rico, the District of Columbia, and the territories to establish their revolving loan programs, and states have moved quickly to make these funds available to water systems. Since 1997 more than 1,400 loans totaling over $2.8 billion support projects to modernize or replace outdated plants and pipes as well as to construct new systems. Small water systems have been a focus of these loans, with over three-fourths awarded to systems serving fewer than 10,000 people. These loans enable water systems to address critical human health needs, even as the cost of providing safe drinking water—finding a water supply, treating the water, delivering the water, and maintaining the system—continues to be a challenge. EPA's 1997 *Drinking Water Needs Survey Report to Congress* identified more than $138 billion in industry needs, the vast majority of which are targeted for delivery of water, rather than for meeting SDWA requirements.

Reducing Exposure to Contaminated Fish

States and tribes have primary responsibility for informing the public about the risks of eating contaminated fish, and EPA plays a leadership and support role. In 1999 approximately seven percent of river miles and 16 percent of lake acres were assessed to determine if they contain fish or shellfish that should not be eaten or should be eaten only in limited quantities, particularly by sensitive populations such as pregnant women and young children. The target of ten percent of river miles assessed was not met. This was primarily because states focused their resources on lakes, where most recreational fishing occurs. The total number of fish advisories in the United States rose by 145 or six percent *(see page II-41 in Goal 4)*. Advisories increased for mercury, polychlorinated biphenyls (PCBs), dioxin, and dichlorodiphenytrichloroethane (DDT), but decreased for chlordane again in FY 2000. The increase in advisories generally reflects more assessments being performed and improved monitoring and data collection methods. Currently, 40 states follow EPA's guidance for developing fish consumption advisories based on risk assessments, up from 25 states in 1998.

To support the fish advisory program, EPA in FY 2000 updated its technical guidance documents to include new toxicity information for several persistent bioaccumulative toxics, new fish consumption limits for recreational and subsistence fishers, and recommendations for simplified advisory approaches. Pursuant to the Clean Water Action Plan (CWAP), EPA

and the American Fisheries Society published a joint report on the national consistency of fish consumption advisory programs.

Improving Beach Monitoring and Public Notification

In FY 2000 EPA and state officials worked to strengthen the voluntary beach protection program to help states and local communities protect their residents from exposure to contaminated waters at their beaches.

NEW JERSEY LEADS THE WAY IN BEACH WATCH

The State of New Jersey is working with 94 of its coastal municipalities to eliminate beach pollution. The municipalities are mapping their storm water and sewage lines and monitoring storm water discharges to coastal waters. Beach closings are usually associated with specific storm events or sewage collection system disruptions. Over the past several years, contamination incidents and subsequent beach closings have been more localized and short-lived. The State expects that continuing to improve storm water management will further decrease the need for beach closings.

EPA's internet site posted information provided by state and local officials on 1,981 beaches—35 percent more beaches than last year, and approximately 50 percent more beaches than when the program began in 1997. This information included 150 digitized maps available to the public, meeting EPA's goal for FY 2000. Approximately 459 beaches (24 percent of the reported beaches) had at least one advisory or closing during the year. Although the number of beaches reported has increased significantly during the past three years, the percentage of beaches with a closing or advisory has remained consistent at approximately 25 percent. Leading causes of impairment included rain leading to storm water runoff which caused elevated bacterial levels.

EPA also provided technical assistance materials to help state and local officials improve their monitoring and advisory programs. EPA published proceedings of two major conferences which addressed needs and procedures designed to improve beach monitoring and public notification across the country. The Agency also produced and distributed a training video and manual on using EPA recommended recreational water quality indicators (enterococci and *E. coli*) to assess beach water quality. EPA will continue to work with state and local officials, and health professionals to improve the quality and consistency of monitoring and reporting beach water conditions and to improve and increase communications with the public.

Conserving and Enhancing the Nation's Waters

In the latest national inventory of water quality summarized below, states, tribes, territories, and interstate commissions report that about 40 percent of the U.S. streams, lakes, and estuaries assessed (about 32 percent of all U.S. waters) were not clean enough to support uses like fishing and swimming. The leading pollutants in impaired waters are sediment, bacteria, nutrients, and metals. Runoff from agricultural lands and urban areas is the primary source of these pollutants.

SUMMARY PROFILE: 1998 NATIONAL WATER QUALITY INVENTORY REPORT TO CONGRESS

Waterbody Type	Total Size	Amount Assessed (% of Total)	Good* (% of Assessed)	Good but Threatened* (% of Assessed)	Polluted* (% of Assessed)
River (miles)	3,662,225	842,426 (23%)	463,441 (55%)	85,544 (10%)	291,264 (35%)
Lakes (acres)	41,593,748	17,390,370 (42%)	7,927,486 (46%)	1,565,175 (9%)	7,897,110 (45%)
Estuaries (sq. miles)	90,465	28,687 (32%)	13,439 (47%)	2,766 (10%)	12,482 (44%)

* Includes waterbodies assessed as not attainable for one or more uses. Note: percentages may not add up to 100% due to rounding.

The CWAP calls for states to identify, from among the 2,262 watersheds nationwide, those high priority watersheds for which restoration plans will be developed and actions taken to restore water quality. For FY 2000 EPA established an ambitious goal of having improvement projects underway in 350, or about 40 percent, of the 889 high-priority watersheds identified by states through last year's unified watershed assessments. Funded largely through increased grants to states for implementation of nonpoint source controls, projects are underway in 324 high priority watersheds. This is slightly short of EPA's goal, but indicates a significant promise of real water quality improvements in impaired watersheds.

State and tribal water quality standards represent water quality goals for each water body and establish the regulatory groundwork for the water quality-based controls (such as the National Pollutant Discharge Elimination System (NPDES) permits) necessary to protect human and ecological health. In FY 2000 the Agency issued guidance to assist states and tribes in assessing the biological health of their waters and recommended new criteria that could be incorporated into existing standards to control nutrients and disease-causing microorganisms. During FY 2000 EPA completed new methods for sediment toxicity testing and compiled information on the food chain effects of contaminated sediments. EPA also issued a revised methodology for deriving ambient water quality criteria to protect human health. The methodology provides guidance to states and tribes to develop criteria and describes the Agency's process for developing national criteria. In FY 2000 EPA acted on new water quality standard submissions for 35 states and 16 tribes. This total did not meet the FY 2000 goal of 22 tribes because tribes have not yet been approved as expected for "treatment as a state" which is a pre-condition of being approved to run a tribal water quality standards program. In addition some extended consultations delayed the submission of tribal water quality standards.

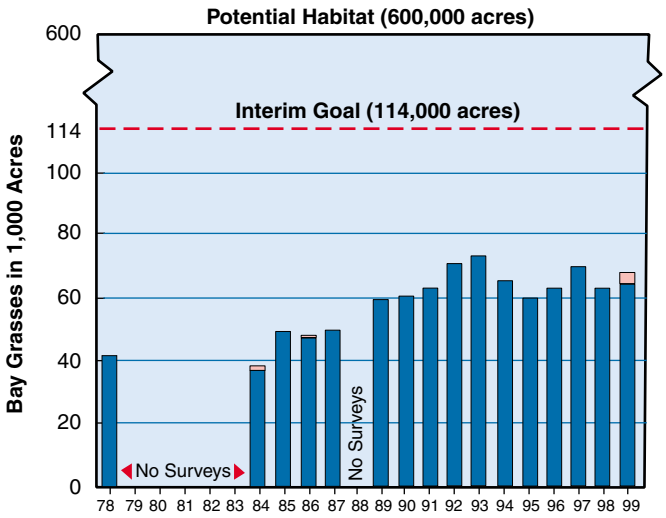
During FY 2000 states and EPA made significant progress toward commitments on core performance measures for determining the sources of pollution and designing clean-up plans, known as Total Maximum Daily Loads (TMDLs). This program is the framework for working in partnership cooperatively with the states to clean up America's polluted waterways under the Clean Water Act (CWA). Under existing authorities of the 2,674 water segments previously identified by states as being polluted and needing TMDLs in FY 2000, states submitted TMDLs for 2,167. EPA approved 1,276 TMDLs submitted by states, and EPA established 166 TMDLs. The number of TMDLs submitted is greater than the number of TMDLs approved, primarily due to the large number of TMDLs submitted for non-impaired waters under CWA Section 303(d)(3), which does not require either approval or disapproval by EPA. In July 2000 EPA issued a final rule addressing the national TMDL program.

EPA continued work to support focused coastal watershed protection activities through efforts in the 28 estuaries in the National Estuary Program. In addition the Agency completed two ocean dumping site designation actions, including a proposed rule to designate an ocean disposal site off Coos Bay, Oregon, and the final designation of the Atchafalaya River, Bayous Chene, Boeuf, and Black disposal sites off the Louisiana coast.

Understanding the scope and quality of our nation's wetlands continues to be a top program priority for EPA. Wetlands play a pivotal role in ensuring watershed health by filtering contaminants, controlling flooding, and serving as a critical habitat for many species of plantsand animals. In FY 2000 EPA met its goal of four more states that made significant progress toward establishing a wetlands monitoring program. EPA also continued working with the U.S. Army Corps of Engineers to make the wetlands permitting program more environmentally protective, including funding the National Academy of Sciences to study the effectiveness of compensatory mitigation in the wetlands permitting program.

The Chesapeake Bay Program Partners have been working to restore water quality and key habitats for the Bay's living resources. Underwater grass beds are a vital habitat for fish, crabs, and other bay creatures. The grasses also serve as a nursery habitat for many fish species. The table displays the trend in Bay grass acreage. From 1985 to 2000, the Chesapeake Bay Program Partners restored over 31,000 acres of Bay grass beds, contributing significantly to the current total level of 68, 125 acres of submerged aquatic vegetation. Although the Agency's FY 2000 target of 71,500 was not achieved, increases are expected to continue as overall water quality improves.

Chesapeake Bay Grass Restoration



The effects of population increases and settlement shifts to coastal areas represent a particular challenge in the Gulf of Mexico region. In FY 2000 EPA's Gulf of Mexico Program, through the leadership of the five gulf states, teamed with numerous coastal communities, environmental organizations, and business and industry leaders to assist in the restoration of 31 impaired coastal water bodies.

In addition, in FY 2000 the Gulf Program's innovative public and private partnerships resulted in a threefold increase in assistance to the states and coastal communities for projects to restore their coastal watersheds. New projects included protection and restoration of more than 800 acres of important seagrass and coastal wetland habitats, and significant results have been achieved through Gulf Five Star Restoration Partnership projects.

Reducing Pollutant Loadings

Reducing Point Source Pollution

A key element of the Agency's efforts to achieve its overarching goal of clean and safe water is the reduction of pollutant discharges from point sources and nonpoint sources. Under the NPDES program, specific limits are set for pollutants discharged from point sources into waters of the United States. These limits are designed to ensure that national technology-based standards (effluent limitations and guidelines) and water quality-based requirements are adequate to meet water quality standards throughout the country. In support of this effort, a number of activities took place in FY 2000, including the following:

- Rulemakings to address wet weather pollution include: (1) promulgation of a final regulation addressing storm water discharges (the Storm Water Phase II Final Rule) which are a leading cause of impairment for the nation's rivers, lakes, and estuaries; and (2) development of draft proposed rules for sanitary sewer overflows, after an extensive stakeholder process.

- Implementation of an aggressive strategy to reduce the backlog of NPDES permits in regions and states (see below). Nationwide, at the end of FY 2000 approximately 70 percent of NPDES permits were current. This represents a 16 percent increase over the 54 percent that were current as of November 1998. Eleven states are already below the ten percent backlog target, and a total of 18 states are on track to meet the target by December 31, 2001. At the end of FY 2000, 44.3 percent (285) of the 644 total EPA issued permits for major point sources were expired; 78.2 percent (1,603) of the 2,140 EPA issued permits for minor point sources were expired. Of 6,115 state-issued permits for major point sources, 26.2 percent (1,603) were expired, and of 49,672 state-issued permits for minor point sources, 15,563 or 31.3 percent were expired. The Agency will continue to work with regions and states to ensure that they take more aggressive steps to meet the 2005 corrective action date.

- Continued work on new guidance and standards for Concentrated Animal Feeding Operations (CAFOs) to mitigate actual and potential water quality impacts from thousands of CAFOs. The largest may have as many as a million animals at one facility. Manure from stockpiles, lagoons, or excessive land application can reach waterways through runoff, erosion, spills, or via ground water. These discharges can result in excessive nutrients (nitrogen, phosphorus, and potassium), oxygen-depleting substances, and other pollutants in the water. This pollution can kill fish and shellfish, cause excess algae growth, harm marine mammals, and contaminate drinking water.

Providing vital financial support for each of these activities is the Clean Water State Revolving Fund

program (CWSRF). For FY 2000 the CWSRF made nearly $4.1 billion available for nationwide construction of wastewater treatment facilities. The repayments of these project loans keeps the funds "revolving" and continually working for American taxpayers. For FY 2000 the CWSRF program continued to encourage use of state Integrated Priority Planning Systems to target new projects at each state's most pressing pollution control needs. Since CWSRF financing began in 1988, more than $30 billion in pollution control financing has been provided to help achieve water quality standards.

In FY 2000 EPA promulgated four new effluent limitation guidelines for the landfill, commercial hazardous waste combustor, transportation equipment cleaning, and centralized waste treatment industries, which should result in combined pollution reduction benefits of more than 65 million pounds of pollutants per year. The Agency also proposed a rule to prevent large fish kills at cooling water intakes at new facilities and issued the 2000 Effluent Guidelines Plan, which outlined a new strategy for future regulation. EPA published a final test procedure for cyanide that will help NPDES permit writers set limits and help regulated facilities demonstrate compliance with those limits.

Strengthening State Nonpoint Source Programs

For the last several years, EPA has been working with states to upgrade and strengthen their nonpoint source control programs. In FY 2000 EPA completed draft guidelines for management of on-site wastewater treatment ("septic") systems and began a major outreach effort to help states support these guidelines. By the end of FY 2000, 49 states had upgraded statewide nonpoint source management programs approved by EPA, exceeding the goal of 45 states. The states' upgraded 319 nonpoint source grant programs have each established specific goals and objectives that are related in large part to long-term goals to restore the quality of impaired waters over a given time period (usually about 15 years). They emphasize partnerships, operating in both watershed and statewide contexts, as appropriate, to accomplish their program goals. States focused one-half of their nonpoint source grants ($100 million) for implementation of watershed restoration strategies that are designed to address their most critical water quality problems. In FY 2000 EPA encouraged states to use the CWSRF for nonpoint source pollution control, including watershed restoration projects. As of June 30, 2000, 28 states had provided a total of $1.2 billion for some 2,100 nonpoint source pollution control projects since the beginning of the program.

SUMMARY OF FY 2000 PERFORMANCE

During FY 2000, EPA, states, and tribes made significant strides in addressing core challenges in the water program. Public participation increased in many parts of the water program. These engaged citizens are vital to achieving our shared watershed goals. EPA will continue to support states and tribes as they encourage more community engagement in decisions about environmental resources and other actions which affect human health and the environment. EPA will continue to develop and improve the program tools such as standards, permits, public information, and resources which help communities to achieve their goals.

STRENGTHENING PROGRAM INTEGRITY THROUGH IMPROVED MANAGEMENT

EPA is continuing to implement an aggressive strategy to reduce the backlog of NPDES permits. The success of this strategy is critical to the Agency's ability to maintain the integrity of the NPDES program and, ultimately, to make progress toward achieving the overall loadings reduction goal. As of October 2000 about 70 percent of NPDES permits are current. This represents an improvement of 16 percent from the backlog measured in November 1998 (54 percent). Over the past year, the Agency has taken steps to ensure that regions and states take more aggressive steps to meet the 2005 corrective action date.

The Agency completed a comprehensive evaluation of the water quality standards program and took several actions to help eliminate the backlog in EPA approvals/disapprovals of state water quality standards submissions. As of October 2000 EPA was overdue in approving or disapproving 45 new or revised standards from 21 states and six tribes, and had yet to promulgate 19 sets of federal replacement standards for 15 states that have not corrected the portions of their standards previously disapproved. Backlogs in EPA water quality standards actions delay timely decisions to control environmental problems, increase uncertainty, and reduce credibility. EPA placed the highest priority on resolving the outstanding disapprovals and unreviewed

standards and made considerable progress in FY 2000. The Agency is also working to identify and eliminate the problems that generated the backlogs and other problems. These efforts include conducting an evaluation of the water quality standards program; working with states to develop a joint strategy to improve the water quality standards development, review, and approval process; and continuing work toward finalizing a Memorandum of Agreement on coordinating implementation of the CWA and the Endangered Species Act.

EPA is in the process of implementing a multi-step action plan to enhance and improve the completeness, accuracy, and timeliness of data in the Agency's Safe Drinking Water Information System (SDWIS). Human health protection is at risk when the Agency does not have reliable and comprehensive data to ensure that safe drinking water is being provided by all public drinking water systems. During FY 2000 the Agency developed and implemented state-specific training for data entry into SDWIS, conducted data verification audits in 12 states, and developed a new transaction processing and tracking report. In addition, the Agency initiated efforts to develop a long-term Information Strategy Plan that addresses drinking water data collection and data management issues over the next 5 to 10 years.

Please see Section III - *Management Accomplishments and Challenges* for a further discussion of the above issues.

RESEARCH CONTRIBUTIONS

Goal 2-related research conducted in FY 2000 continued to strengthen the scientific basis for drinking water standards by providing improved methods and new data to better evaluate and control the risks associated with exposure to chemical and microbial contaminants in drinking water. To support the SDWA and its 1996 amendments, EPA's drinking water research program focused on the development of health effects data, analytical tools, and risk assessment methods for disinfectant by-products (DBPs), waterborne pathogens, and arsenic. The Agency also continued to develop and evaluate cost-effective treatment technologies for removing pathogens from water supplies while minimizing DBP formation, and for maintaining the quality of treated water in the distribution system. Increased emphasis was placed on filling key data gaps and developing methods for chemicals and microbial pathogens on the Contaminant Candidate List.

Research in FY 2000 evaluated exposures to stressors and their effects on aquatic systems and will improve the Agency's understanding of the structure, function, and characteristics of those systems. This research will be used to improve risk assessment methods to develop aquatic life, habitat, and wildlife criteria. The Agency is also developing assessment methods and cost-effective management technologies for contaminated sediments, with an emphasis on identifying innovative in situ solutions. In FY 2000 EPA continued to develop diagnostic tools to evaluate the exposures to toxic constituents of wet weather flows. The Agency also continued to develop and validate effective watershed management strategies for controlling wet weather flows, especially high-volume, toxic flows. Research was also conducted to develop the effective beach evaluation tools necessary to make timely and informed decisions on beach advisories and closures.

PROGRAM EVALUATION

The General Accounting Office conducted a study on the states' ability to implement increasing drinking water program requirements. The final report of the study was released at a congressional hearing held on September 19, 2000, by the Subcommittee on Health and the Environment of the House Committee on Commerce (**www.gao.gov**, Report T-RCED-00-298). Prior to the release of GAO's report, EPA and the Association of State Drinking Water Administrators (ASDWA) agreed on actions to take in FY 2001 to address this issue. EPA will work with ASDWA and states to determine each state's program status, particularly to identify barriers and common problems. EPA's regions will then work with individual states to address barriers that are hindering each state's ability to fully meet SDWA goals. EPA headquarters is working with regions to share lessons learned about how to simplify and improve implementation of drinking water regulations. EPA plans to continue its effort to reduce monitoring and data collection burdens while still collecting adequate high quality data to meet essential program needs.

In addition to external studies, in FY 2000 EPA conducted several internal reviews which expanded its ability to use evaluation to strengthen program management to achieve the goals of clean and safe water. EPA assessed the process of developing, reviewing and approving state water quality standards. These state-adopted standards describe how water bodies will be used and contain the water quality criteria that must be met to protect those designated uses. Developing standards is primarily a state function. EPA's role is to review, in appropriate consultation with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service (the Services), and affirm that the state standards meet the requirements of the CWA. The standards review and approval process has been criticized for being too slow and inefficient. EPA conducted a thorough nationwide evaluation of the program to identify the causes and recommend solutions that will improve EPA's approval process and assure that standards are based on sound science and that states have determined appropriate designated uses and criteria for monitoring. The evaluation found that statutory and programmatic differences, lack of sufficient resources and technical expertise, inefficient coordination and communication, and lack of clear and consistent national guidance all contributed to the problem. EPA is implementing several of the recommendations. In early FY 2001 the Agency will enter into a Memorandum of Agreement with the Services to streamline the now complex and time-consuming review procedures related to the Endangered Species Act. The Agency also expects to complete a strategy for implementing other study recommendations during the latter part of FY 2001.

EPA completed an internal evaluation of the National Marine Debris Monitoring Program, to determine whether this voluntary program is statistically effective and whether the program design remains valid. Preliminary results suggest that the program will meet its original goals of measuring the amount of marine debris on U.S. coasts and identifying the sources of the debris. EPA is partnering with the Center for Marine Conservation (CMC) on this project. Summarized data sets are available on CMC's web site at **http://www.cmc-ocean.org/nmdmp** and are user friendly for local, state, regional, and nationwide stakeholders.

EPA conducted an internal evaluation of regional oversight of state NPDES programs in Regions 3 and 4. These internal reports recommended that the regions build consistency in resolving issues by using tools such as central tenets listing conditions for permit disapproval, time lines for comment and response, staff training and support, and tracking/management systems.

ASSESSMENT OF IMPACTS OF FY 2000 PERFORMANCE ON FY 2001 ANNUAL PERFORMANCE PLAN

FY 2001 performance goals and measures will continue to evolve, reflecting EPA's increasing ability to measure and/or represent water quality and its contributions to human health and healthy aquatic ecosystems, as well as its value as a natural resource. For example, in FY 2001 EPA will report for the first time on the increased number of whole watersheds whose assessed waters largely meet designated uses. FY 2001 measures will display the continuing progress being made in maintaining the population served by water systems receiving safe drinking water (even as systems incorporate new health-based standards). The Agency has met its FY 2000 performance goal of another two million people receiving the benefits of secondary treatment (see Annual Performance Goal (APG) # 16), so that nearly all of the population served by publicly owned treatment works receive the benefits of secondary treatment or better. Beginning in 2001, EPA will report the number of CWSRF projects funded as a performance measure. In addition EPA expects in 2001 to increase the number of waters for which TMDLs have been developed and to increase the number of updated water quality standards.

EPA's 2001 goals also reflect the fact that a complete baseline of information for many programs is not yet available, and that a number of our most important programs depend on significant voluntary efforts on the parts of states and other partners. Targets for 2001 include increasing the percentage of waters assessed for meeting water quality standards for designated uses, waters assessed for the need for fish advisories, and beaches where monitoring and notification of the public takes place. Resource constraints as well as overlapping or conflicting program requirements mean that meaningful monitoring and reporting remain challenges. States and tribes increased their efforts in these areas in FY 2000, and EPA expects them to continue to

improve in 2001. EPA will continue to work with partners to support better standards and testing, monitoring and reporting, and provision of the resulting information to the public quickly, clearly, and accurately.

TABLES OF RESULTS

The following tables of results includes performance results for the FY 2000 APGs that appear in Goal 2. In cases where the FY 2000 APG is associated with an FY 1999 APG, the table includes the FY 1999 APG below the FY 2000 APG for ease in comparing performance. Where applicable, the tables note cases where FY 2000 APGs are supported by National Environmental Performance Partnership System Core Performance Measures (CPMs). As described in more detail in Section I of the report (the Overview and Analysis), states use CPMs to evaluate their progress toward mutual program goals. Additionally, EPA is providing information on FY 1999 APGs for which data was not available when the FY 1999 report was published as well as those FY 1999 APGs that are not associated with any APGs in FY 2000.

Summary FY 2000 Performance
8 Goals Met | 2 Goals Not Met | 0 Other

GOAL 2 - CLEAN AND SAFE WATER

FY 2000 ANNUAL PERFORMANCE GOALS AND MEASURES	FY 2000 Planned	FY 2000 Actual	FY 1999 Actual
BY 2005, PROTECT HUMAN HEALTH SO THAT 95% OF THE POPULATION SERVED BY COMMUNITY WATER SYSTEMS WILL RECEIVE WATER THAT MEETS DRINKING WATER STANDARDS, CONSUMPTION OF CONTAMINATED FISH AND SHELLFISH WILL BE REDUCED, AND EXPOSURE TO MICROBIAL AND OTHER FORMS OF CONTAMINATION IN WATERS USED FOR RECREATION WILL BE REDUCED.			
FY 2000 APG 9: **91% of the population served by community drinking water systems will receive drinking water meeting all health-based standards that were in effect as of 1994, up from 83% in 1994.** Corresponds with FY 2000 NEPPS Core Performance Measure.	91%	91%	
(FY 1999) *89% (increase of 1% over 1998) of the population served by community water systems will receive drinking water meeting all health-based standards in effect as of 1994, up from 83% in 1994.*			91%
Explanation: Goal met.			
Data Source: The Safe Drinking Water Information System (SDWIS) serves as the central repository for data on both the states' implementation of and compliance with existing and new drinking water regulations. States and EPA regions (for "direct implementation" jurisdictions) enter data representing public water systems characteristics and drinking water monitoring into the SDWIS database.			
Data Quality: SDWIS has a full suite of software-based edit checks and quality assurance procedures to aid accurate data entry. However, there are recurrent reports of discrepancies between national and state data bases, as well as specific mis-identifications reported by individual utilities. Given the particular need for confidence in the completeness and accuracy of data about drinking water quality, EPA designated SDWIS content as an Agency material weakness in 1999, under the Federal Managers' Financial Integrity Act.			
FY 2000 APG 10: **Reduce exposure to contaminated recreational waters by increasing the information available to the public and decision-makers.**			**No FY 1999 APG**
Performance Measures			
- Cumulative number of beaches for which monitoring and closure data is available at "beaches" web-page.	1,800	1,981	
- Number of digitized maps on the web-page.	150	150	
Explanation: Goal met. The additional electronic information enables the public to precisely locate beach closings, reducing exposure to contaminated recreational waters.			
Data Source: The National Health Protection Survey of Beaches Information Management System database.			
Data Quality: Self-reported data for public use; participation is voluntary and presently incomplete. Therefore no rigorous quality assurance requirements are in place. Inconsistencies between different reporting jurisdictions are possible.			

FY 2000 ANNUAL PERFORMANCE GOALS AND MEASURES	FY 2000 Planned	FY 2000 Actual	FY 1999 Actual
FY 2000 APG 11: **Reduce uncertainties and improve methods associated with the evaluation and control of risks posed by exposure to disinfection by-products (DBPs) in drinking water.**			
(FY 1999) *EPA will develop critical dose-response data for disinfection by-products (DBPs), water-borne pathogens, and arsenic for addressing key uncertainties in the risk assessment of municipal water supplies.*			9/30/99
Performance Measures			
- Report regarding feasibility of refined DBP exposure data for previous epidemiological studies.	1	1	
- Report on new DBPs from alternative disinfectants.	1	1	
- Final peer-reviewed report on selected DBP mixtures' toxicological endpoints.	1	1	
Explanation: Goal met. EPA completed methods for improving the interpretation of data from published DBP epidemiology studies, and reports that provide important information about new DBPs in drinking water, and the risks that may be posed by exposures to mixtures of these contaminants.			
Data Source: Agency generated material.			
Data Quality: As required by the Agency-wide formal peer review policy issued in 1993, and reaffirmed in 1994 and 1998, all major scientific and technical work products used in Agency decision making are independently peer reviewed before their use. EPA has implemented a rigorous process of peer review for both its in-house and extramural research programs. Peer review panels include scientists and engineers from academia, industry, and other federal agencies.			
FY 2000 APG 12: **Reduce uncertainties and improve methods associated with the evaluation and control of risks posed by exposure to microbial contaminants in drinking water.**			
(FY 1999) *EPA will develop critical dose-response data for disinfection by-products (DBPs), water-borne pathogens, and arsenic for addressing key uncertainties in the risk assessment of municipal water supplies.*			9/30/99
Performance Measures			
- Describe different technologies of cost/effective control of Cryptosporidium and DBPs.	9/30/00		
- Report on U. S. waterborne disease outbreaks.	1	1	
- Evaluation of Method 1622 for Cryptosporidium.	1	1	
Explanation: Goal met. EPA completed reports on the nature and magnitude of waterborne disease outbreaks in the United States during 1997-1998 and on an evaluation of a key method for the identification of Cryptosporidium in drinking water, directly helping to reduce uncertainties and improve methods associated with the evaluation and control of risks posed by exposure to microbial contaminants in drinking water. A project to evaluate cost-effective treatment methods for Cryptosporidium and DBPs was not completed due to insufficient time being allotted for the completion of this research. However, EPA completed complementary projects, such as a research progress report on biofilm (microbial communities growing on the confining surfaces of a distribution system) formation and control which will provide useful information on protecting distribution systems. In this way EPA appreciably met the performance goal.			
Data Source: Same as FY 2000 APG 11.			
Data Quality: Same as FY 2000 APG 11.			

FY 2000 ANNUAL PERFORMANCE GOALS AND MEASURES	FY 2000 Planned	FY 2000 Actual	FY 1999 Actual
CONSERVE AND ENHANCE THE ECOLOGICAL HEALTH OF THE NATION'S (STATE, INTERSTATE, AND TRIBAL) WATERS AND AQUATIC ECOSYSTEMS–RIVERS AND STREAMS, LAKES, WETLANDS, ESTUARIES, COASTAL AREAS, OCEANS, AND GROUNDWATER–SO THAT 75% OF WATERS WILL SUPPORT HEALTHY AQUATIC COMMUNITIES BY 2005.			
FY 2000 APG 13: **Environmental improvement projects will be underway in 350 high priority watersheds as a result of implementing activities under Clean Water Action Plan (CWAP).**	**350**	**324**	
(FY 1999) *As part of the CWAP, all states will be conducting or have completed unified watershed assessments, with support from EPA, to identify aquatic resources in greatest need of restoration or prevention activities.*			**56**
Explanation: Goal not met. Environmental improvement projects underway in 324 high priority watersheds, which is slightly short of EPA's ambitious goal. The goal is for FY 2000 only, to be superseded in FY 2001 by a direct measure of the number of large-scale watersheds showing improvements in water quality.			
Data Source: Internal Agency count.			
Data Quality: There are no data quality issues.			
FY 2000 APG 14: **Assure that states and tribes have effective, up-to-date water quality standards programs adopted in accordance with the Water Quality Standards regulation and the Water Quality Standards (WQSs) program priorities.**			**No FY 1999 APG**
Performance Measures			
- Number of states with new or revised WQSs that EPA either approved, or disapproved ,and promulgated replacements.	**15**	**35**	
- Cumulative number of tribes with approved WQSs in place.	**22**	**16**	
Explanation: Goal not met. State WQS reviews are under a 3-year cycle, as mandated by the Clean Water Act, under which all states maintain updated water quality programs; therefore, the Agency will review approximately one-third of all state/tribal programs each year. Fewer tribes than expected have achieved "treatment as a state" status, which is a pre-condition for being approved to run a WQS program. EPA is committed to improving the Agency's review and approval process for "treatment as a state" to address this barrier. In FY 2001 EPA expects to implement a Memorandum of Agreement with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service to greatly improve the timeliness and effectiveness of cross-agency coordination in the WQS review and approval process. EPA will also provide additional technical assistance to tribes to help them develop better WQSs.			
Data Source: Same as FY 2000 APG 13.			
Data Quality: Same as FY 2000 APG 13.			
FY 2000 APG 15: **Identify the primary life support functions of surface waters that contribute to the management of sustainability of watersheds.**			
(FY 1999) *EPA will provide data and information for use by states and Regions in assessing and managing aquatic stressors in the watershed, to reduce toxic loadings and improve ecological risk assessment.*			**9/30/99**
Performance Measure			
- Research strategy document to determine the impact of landscape changes on wetland structure and function.	**1**	**1**	
Explanation: Goal met. The completed work evaluated specific habitats such as wetlands, riparian areas, headwaters, and estuaries to determine their basic function and role in the landscape. This information will allow EPA to determine what makes these habitats critical and will provide a basis for prioritizing protection and restoration decisions.			

FY 2000 ANNUAL PERFORMANCE GOALS AND MEASURES	FY 2000 Planned	FY 2000 Actual	FY 1999 Actual
Data Source: Same as FY 2000 APG 11. **Data Quality:** Same as FY 2000 APG 11.			
BY 2005, POLLUTANT DISCHARGES FROM KEY POINT SOURCES AND NONPOINT SOURCE RUNOFF WILL BE REDUCED BY AT LEAST 20% FROM 1992 LEVELS. AIR DEPOSITION OF KEY POLLUTANTS IMPACTING WATER BODIES WILL BE REDUCED.			
FY 2000 APG 16: **Another two million people will receive the benefits of secondary treatment of wastewater, for a total of 181 million people.**	**2 M**	**2 M**	
(FY 1999) *Another 3.4 million people will receive the benefits of secondary treatment of wastewater, for a total of 179 million.*			**3.4 M**
Explanation: Goal met. Currently nearly all of the nation's population is served by publicly owned treatment works with secondary treatment or better.			
Data Source: Manual system. Extracted from EPA databases including the Clean Water Needs Survey Database and the Permits Compliance System.			
Data Quality: Data are manually verified.			
FY 2000 APG 17: **Industrial discharges of pollutants to the nation's waters will be significantly reduced through implementation of effluent guidelines.**			**No FY 1999 APG**
Performance Measures			
- Cumulative reduction in toxic-pollutant loadings by facilities subject to effluent guidelines promulgated between 1992-1999, against 1992 levels (predicted by models).	**4 M lbs**	**4 M lbs**	
- Cumulative reduction in conventional-pollutant loadings by facilities subject to effluent guidelines promulgated between 1992-1999, against 1992 levels (predicted by models).	**385 M lbs**	**473 M lbs**	
- Cumulative reduction in non-conventional-pollutant loadings by facilities subject to effluent guidelines promulgated between 1992-1999, against 1992 levels (predicted by models).	**260 M lbs**	**136 M lbs**	
Explanation: Goal met. EPA substantially met the goal of reducing industrial discharges of the three classes of pollutants. Targets were based on model projections of effluent guidelines, having to estimate both the facility universe and the number of permits developed. The actual number of issued permits in different industry sectors resulted in greater than expected reductions in conventional pollutants, and less than expected reductions in non-conventional pollutants.			
Data Source: The Permit Compliance System (PCS) is the principle compliance tracking system governing EPA's supervision of the National Pollutant Discharge Elimination System (NPDES) permit program. It contains data from EPA and states on Wastewater facility NPDES permits.			
Data Quality: Ongoing quality action/quality control safeguards include EPA review of state databases that serve as key data sources. However, there are known inconsistencies between state/federal records, particularly for minor facilities, and previous EPA Office of Inspector General audits have discussed the need for fresher data. EPA is engaged in a major modernization of the PCS system and databases.			
FY 2000 APG 18: **Develop modeling, monitoring, and risk management methods that enable planners and regulatory officials to more accurately characterize receiving and recreational water quality and to select appropriate control technologies.**			
(FY 1999) *By 2003: Deliver support tools, such as watershed models, enabling resource planners to select consistent, appropriate watershed management solutions and alternative, less costly wet-weather flow control technologies.*			**Target year is FY 2003**
Performance Measure			
- Link urban storm water management models to a Geographic Information System (GIS).	**1**	**1**	

FY 2000 ANNUAL PERFORMANCE GOALS AND MEASURES		FY 2000		FY 1999
		Planned	Actual	Actual
Explanation:	Goal met. EPA met this goal by completing research linking urban storm water management models to a geographic information system, which will assist in the development of improved safety guidelines and pollution indicators that states, local municipalities, and tribes can use to monitor recreational waters in a cost-effective way. Improving the characterization of recreational water quality will provide important input to the development of guidance in state, tribal, and local implementation of beach monitoring and notification programs designed to reduce human exposure to waterborne microbials and protect the public health.			
Data Source:	Same as FY 2000 APG 11.			
Data Quality:	Same as FY 2000 APG 11.			

FY 1999 ANNUAL PERFORMANCE GOALS
(NO LONGER REPORTED FOR FY 2000)

- EPA will issue and begin implementing two protective drinking water standards for high-risk contaminants, including disease-causing micro-organisms (Stage I Disinfection/Disinfection By-products and Interim Enhanced Surface Water Treatment Rules).
- 4,400 community water systems will be implementing programs to protect their source water (an increase of 1,650 systems over 1998).
- EPA will provide funding to restore wetlands and river corridors in 30 watersheds that meet specific “Five Star Project” criteria relating to diverse community partnerships (for a cumulative total of 44 watersheds).
- More than 220 communities will have local watersheds improved by controls on combined sewer overflows (CSO) and storm water.
- In support of the Clean Water Action Plan, ten additional states will upgrade their nonpoint source programs, to ensure that they are implementing dynamic and effective nonpoint source programs that are designed to achieve and maintain beneficial uses of water.